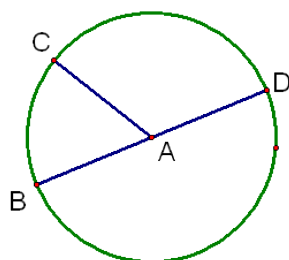


8-7 Circumference and Area of Circles



Circle--set of all points in a plane that are the same distance from a given point (center)

Radius--distance from center to a point on the circle

Diameter--distance across circle

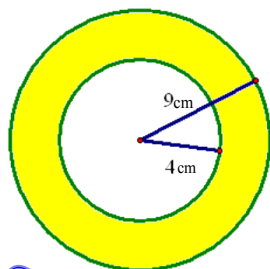
Circumference--distance around circle

$$C = 2\pi r \quad \text{or} \quad \pi d$$

$$A = \pi r^2$$

$r = 3$	$d = 6$	$A = 9\pi$	$C = 6\pi$
		≈ 28.3	≈ 18.8
$r = 7$	$d = 14$	$A = 49\pi$	$C = 14\pi$
		153.9	
$r = 4$	$d = 8$	$A = 16\pi$	$C = 8\pi$
$r = 2.5$	$d = 5$	$A = 6.25\pi$	$C = 5\pi$
$\frac{5}{2}$			

$r = 5$	$d = 10$	$A = 25\pi$	$C = 10\pi$
$r = \frac{7}{2}$	$d = 7$	$A = \frac{49}{4}\pi$	$C = 7\pi$
$r = 5.8$	$d = 11.7$	$A = 33.64\pi$	$C = 36.7\pi$
		105.7	
$r = 5$	$d = 10$	$A = 78.5$	$C = 10\pi$
		$25.0 = r^2$	



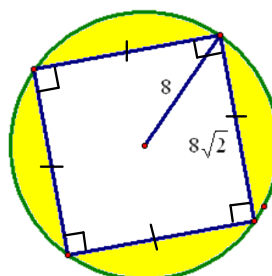
Find the area of the shaded region.

$$A = \pi r^2$$

$$A_{\text{large}} - A_{\text{small}}$$

$$81\pi - 16\pi$$

$$A = 65\pi \text{ cm}^2$$



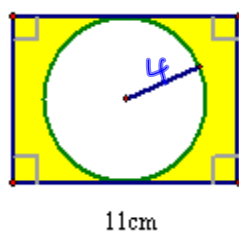
Find the area of the shaded region.

$$A_{\text{circle}} - A_{\text{sq}}$$

$$64\pi - (8\sqrt{2})^2$$

$$201.1 - 128$$

$$= 73.1 \text{ cm}^2$$



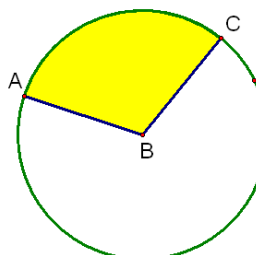
Find the area of the shaded region.

$$A = \pi r^2$$

$$A_{\text{rect}} - A_{\text{circle}}$$

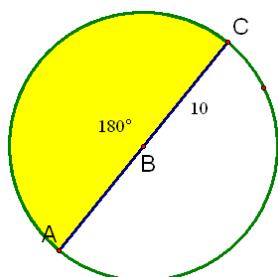
$$88 \text{ cm}^2 - 16\pi$$

$$= 37.7 \text{ cm}^2$$



Central Angle--an angle whose vertex is the center of the circle.

Sector--region of the circle formed by two radii and a part of the circle.



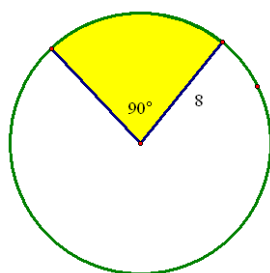
Find the area of the sector.

$$\frac{180}{360} = \frac{1}{2} 100\pi$$

$$= 50\pi \text{ u}^2$$

Area of a Sector

$$\frac{\text{Area of sector}}{\text{Area of entire circle}} = \frac{\text{Measure of Central Angle}}{\text{Measure of entire circle}}$$



Sector

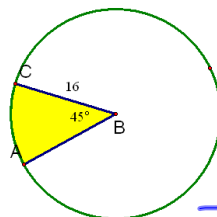
A =

$$A = \pi 8^2$$

$$\frac{A}{64\pi} = \frac{90}{360}$$

$$360A = 90 \cdot 64\pi$$

$$A = 50.3 \text{ u}^2$$



Sector

A =

$$A = \pi(16)^2$$

$$\frac{A}{256\pi} = \frac{45}{360}$$

$$45 \cdot 256\pi = 360A$$

$$1005 \text{ u}^2 = A$$

HW

p456-458

10-12,15-20,33-35,38,39